

Study of facies and sedimentary environments of upper Devonian and carboniferous deposits in Abadeh area, Fars province, Iran

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ABSTRACT:

The aim of this research is to investigate facies and sedimentary environment of post-Devonian deposits and pre-carboniferous in Esteghlal Fireclay Mine in Abadeh with a longitude of 53 degrees and 42 minutes and a latitude of 31 degrees and 55 minutes where it is located in 218 km from the southeast of Isfahan and 10 km to the Northeast of Abadeh. It is surrounded by Zagros Mountain. With a production of about 1 million tons per year, it has the largest reserves of fireclay in the Middle East. After choosing three stratigraphic sections of (A), (B), and (C), and taking 250 samples manually, 10 facies belonging to five facies groups in tidal flat, lagoon, dam, open marine, and delta facies were identified; these 10 facies are: facies 1 (Mudstone with fenestral fabrics), facies2 (Stromatolite bindstone), facies 3 (Wacke stone / Pelloid Bioclast Pack stone with various fossils), facies 4 (Packstone / Bioclast Grainstone) facies 5 (Packs tone /Bioclast grain stone with intraclast), facies 6 (Pack stone / Echinoid grain stone), facies 7 (Echinoid and Bioclast brachiopod rudstone), facies 8 (Pack stone / bioclast Wacke stone with various fossils), facies 9 as a Clastic facies (Silt stone), facies 10 as a Clastic facies (lichens).

The ancient geography situation of this area can be explored through interpreting and an examining this micro-facies. Stratigraphic section (A) with 60m thicknesses represents the sedimentation in deltaic environment outside the water (deltaic plain), stratigraphic section (B) with 120m thicknesses represents the sedimentation in deltaic environment underwater (forefront and end of the delta). Carbonated deposits in stratigraphic section (C) with 75m thicknesses is related to a carbonated platform type (Homoclinal ramp).

Keywords:

Abadeh, sedimentational environment, facies, facies groups.